

Ian Gildenhuis
Air Quality Management
246 Voortrekker Road
Vasco
7460

Date:
07 October 2020

Enquiries:
021 573 6162

Ref: ANK/2020/10

Dear Ian

ANKERLIG POWER STATION'S MONTHLY EMISSIONS REPORT FOR THE MONTH OF SEPTEMBER 2020

This serves as the monthly report required in terms of Section 9 in Ankerlig Power Station's Atmospheric Emission License (WCCT036). The emissions are for the month of September, these being SO₂, CO₂, PM and NO_x (as NO₂).

1 Raw Materials and Products

Table 1. Quantity of Raw Materials and Products used/produced for the month of September 2020

Raw Materials and Products used	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Total consumption in Month of September
	Fuel Diesel	Tons/hour/unit	40	15 828 949.11L
Production Rates	Product/ By-Product Name	Unit	Maximum Production Capacity Permitted per unit (MW)	Total production/Power sent out in Month of September
	Energy	MWh	170 MW per hour per unit	52 162.61 MW/h
	Fuel use per hour per unit (L)		Fuel efficiency Litres per MWH	
	<i>Unit 11: 31 939.19</i> <i>Unit 12: 34 919.07</i> <i>Unit 21: 32 145.01</i> <i>Unit 22: 35 156.31</i> <i>Unit 31: 35 554.28</i> <i>Unit 32: 31 713.45</i> <i>Unit 41: 31 270.19</i> <i>Unit 42: 33 722.37</i> <i>Unit 43: 34 093.59</i>		<i>Unit 11: 322.41</i> <i>Unit 12: 319.37</i> <i>Unit 21: 290.00</i> <i>Unit 22: 296.59</i> <i>Unit 31: 309.96</i> <i>Unit 32: 313.66</i> <i>Unit 41: 291.16</i> <i>Unit 42: 291.62</i> <i>Unit 43: 296.06</i>	

2 Abatement Technology

Table 2. Abatement Equipment Control Technology availability for the month of September

Associated Unit	Technology Type	Actual Utilisation (%) for the month of September
Unit 11	Low NOx burners	100%
Unit 12	Low NOx burners	100%
Unit 21	Low NOx burners	100%
Unit 22	Low NOx burners	100%
Unit 31	Low NOx burners	100%
Unit 32	Low NOx burners	100%
Unit 41	Low NOx burners	100%
Unit 42	Low NOx burners	100%
Unit 43	Low NOx burners	100%

Table 3: Tonnages and mg/Nm³ for the month of September

	Date & time	CO (mg/Nm ³)	NO _x (mg/Nm ³)	PM (mg/Nm ³)	SO ₂ (mg/Nm ³)
Hourly Licence Limit mg/Nm³			250	75	3500
Unit 11	2020/09/17 19:00	0.1	129	0	94.2
	2020/09/10 20:00	0.1	126	0	85.2
	2020/09/10 19:00	0.1	127	0	85.7
	2020/09/09 21:00	0.1	95	0	86.8
	2020/09/09 20:00	0.1	105	0	86.5
	2020/09/09 19:00	0.1	105	0	87.9
	2020/09/09 18:00	0.1	100	0	89.2
	2020/09/08 19:00	0.1	125	0	87.1
	2020/09/07 20:00	0.1	110	0	89
	2020/09/07 19:00	0.1	112	0	89.4
	2020/09/02 19:00	0.1	96	0	83.2
	2020/09/02 18:00	0.1	86	0	85.2
	2020/09/02 17:00	0.1	86	0	84.9
	2020/09/02 16:00	0.1	97	0	83.3
	2020/09/02 15:00	0.1	108	0	81.2
	2020/09/02 14:00	0.1	114	0	81.2
	2020/09/01 22:00	0.1	94	0	87.2
	2020/09/01 21:00	0.1	119	0	84.7
	2020/09/01 20:00	0.1	131	0	84.3
	2020/09/01 19:00	0.1	123	0	85.8
	2020/09/01 18:00	0.1	127	0	85.4
	2020/09/01 17:00	0.1	130	0	86.1
	2020/09/01 16:00	0.1	126	0	86.4
	2020/09/01 15:00	0.1	129	0	86.2
	2020/09/01 14:00	0.1	119	0	87.2
	2020/09/01 13:00	0.1	104	0	89.2
	2020/09/01 12:00	0.1	134	0	85.2
	2020/09/01 11:00	0.1	131	0	84.7
	2020/09/01 10:00	0.1	128	0	84.8

Unit 12	2020/09/10 20:00	1.7	111	0	0.3
	2020/09/10 19:00	0.9	138	0	0.3
	2020/09/10 18:00	0.4	153	0	0.1
	2020/09/10 17:00	0.9	155	0	0.1
	2020/09/10 16:00	2.8	147	0	0.2
	2020/09/10 15:00	1.5	159	0	1.8
	2020/09/10 14:00	2	161	0	3.1
	2020/09/10 13:00	2.8	164	0	0.5
	2020/09/10 12:00	1	140	0	0.1
	2020/09/10 11:00	1.4	122	0	1.4
	2020/09/10 10:00	1.1	97	0	0.6
	2020/09/10 09:00	1.2	109	0	0.9
	2020/09/10 08:00	1.3	131	0	0.1
	2020/09/10 07:00	1.4	142	0	0.1
	2020/09/09 21:00	1.5	149	0	0.1
	2020/09/09 20:00	1.5	149	0	0.1
	2020/09/09 19:00	1.7	154	0	0.1
	2020/09/09 18:00	1.3	142	0	0.2
	2020/09/08 19:00	1.7	137	0	0.6
	2020/09/07 20:00	1.5	157	0	0.4
	2020/09/07 19:00	1.3	160	0	0.4
	2020/09/05 19:00	1.1	147	0	0.1
	2020/09/04 08:00	1	157	0	0.2
	2020/09/02 19:00	1.1	159	0	0.2
	2020/09/02 18:00	1.8	158	0	0.1
	2020/09/02 17:00	1.9	160	0	0.2
	2020/09/02 16:00	1.5	149	0	0.2
	2020/09/02 15:00	1.8	130	0	0.3
	2020/09/02 14:00	2.8	179	0	2.2
	2020/09/02 13:00	3.1	183	0	3.3
	2020/09/02 12:00	2.4	176	0	2.2
	2020/09/01 23:00	2.2	161	0	0.9
	2020/09/01 22:00	1.7	111	0	0.3
	2020/09/01 21:00	0.9	138	0	0.3
	2020/09/01 20:00	0.4	153	0	0.1
	2020/09/01 19:00	0.9	155	0	0.1
	2020/09/01 18:00	2.8	147	0	0.2
	2020/09/01 17:00	1.5	159	0	1.8
	2020/09/01 16:00	2	161	0	3.1
	2020/09/01 15:00	2.8	164	0	0.5
	2020/09/01 14:00	1	140	0	0.1
	2020/09/01 13:00	1.4	122	0	1.4
	2020/09/01 12:00	1.1	97	0	0.6
	2020/09/01 11:00	1.2	109	0	0.9
	2020/09/01 10:00	1.3	131	0	0.1
	2020/09/01 09:00	1.4	142	0	0.1

Unit 21	2020/09/17 19:00	3	7	0	12.4
	2020/09/09 20:00	1.4	4	0	2.6
	2020/09/09 19:00	2.2	5	0	9.2
	2020/09/05 19:00	0.1	2	0	0.8
	2020/09/02 16:00	0.3	157	0	2.4
	2020/09/02 15:00	0.4	157	0	0.5
	2020/09/02 14:00	0.4	161	0	0.4
	2020/09/01 22:00	0.3	168	0	0.3
	2020/09/01 21:00	0.3	171	0	0.7
	2020/09/01 20:00	0.3	175	0	0.3
	2020/09/01 19:00	0.3	174	0	0.3
	2020/09/01 18:00	0.3	178	0	0.3
	2020/09/01 14:00	7.2	182	0	23.7
	2020/09/01 13:00	2.9	180	0	8.8
	2020/09/01 12:00	9.5	176	0	33.5
	2020/09/01 11:00	4.9	172	0	17.8
	2020/09/01 10:00	1.4	171	0	5.4
	2020/09/01 09:00	0.4	175	0	0.5
Unit 22	2020/09/17 19:00	1	120	0.1	1.7
	2020/09/10 20:00	1.4	121	0.1	1.8
	2020/09/10 19:00	0.7	129	0.1	2.9
	2020/09/10 18:00	1.5	110	0.1	2.4
	2020/09/10 17:00	1.3	118	0.1	1.8
	2020/09/10 16:00	0.6	125	0.1	2.6
	2020/09/10 15:00	1.2	116	0.1	1.9
	2020/09/10 14:00	1.3	116	0.1	4.6
	2020/09/10 13:00	1.6	134	0.1	3.7
	2020/09/10 12:00	0.2	121	0.1	0.2
	2020/09/10 11:00	2	110	0.1	2.4
	2020/09/10 10:00	2	95	0.1	2.6
	2020/09/10 09:00	2	98	0.1	2.3
	2020/09/10 08:00	2.1	111	0.1	2
	2020/09/10 07:00	0.2	122	0.1	0.1
	2020/09/09 21:00	0.2	123	0.1	0.1
	2020/09/09 20:00	0.4	124	0.1	0.1
	2020/09/09 19:00	1.5	128	0.1	0.6
	2020/09/07 20:00	1.5	116	0.1	2
	2020/09/07 19:00	1.3	132	0.1	1.6
	2020/09/05 19:00	1.4	135	0.1	1.3
	2020/09/04 08:00	1.2	125	0.1	3.1
	2020/09/02 19:00	1.5	131	0.1	2.9
	2020/09/02 18:00	1.6	131	0.1	2.9
	2020/09/02 17:00	1.3	131	0.1	1.8
	2020/09/02 16:00	1.6	130	0.1	3.4
	2020/09/02 15:00	1.2	122	0.1	3
	2020/09/02 14:00	1.3	108	0.1	3.4
	2020/09/02 13:00	1.7	133	0.1	3.2

	2020/09/02 12:00	0.1	137	0.1	0.1
	2020/09/01 22:00	0.1	136	0.1	0.1
	2020/09/01 21:00	0.1	137	0.1	0.8
	2020/09/01 20:00	1	120	0.1	1.7
	2020/09/01 19:00	1.4	121	0.1	1.8
	2020/09/01 18:00	0.7	129	0.1	2.9
	2020/09/01 17:00	1.5	110	0.1	2.4
	2020/09/01 16:00	1.3	118	0.1	1.8
	2020/09/01 15:00	0.6	125	0.1	2.6
	2020/09/01 14:00	1.2	116	0.1	1.9
	2020/09/01 13:00	1.3	116	0.1	4.6
	2020/09/01 12:00	1.6	134	0.1	3.7
	2020/09/01 11:00	0.2	121	0.1	0.2
	2020/09/01 10:00	2	110	0.1	2.4
	2020/09/01 09:00	2	95	0.1	2.6
Unit 31	2020/09/17 19:00	11.3	95	0.1	9
	2020/09/17 18:00	10.9	107	0.1	7.6
	2020/09/10 20:00	7.4	105	0	1.6
	2020/09/10 19:00	9.7	118	0	3.1
	2020/09/10 18:00	8.4	114	0	2.8
	2020/09/10 17:00	14.6	122	0	9.6
	2020/09/10 16:00	14.5	153	0	10
	2020/09/10 15:00	5.6	121	0	0.7
	2020/09/10 14:00	6	111	0	2.1
	2020/09/10 13:00	6	99	0	1.8
	2020/09/10 12:00	6	105	0	2.2
	2020/09/10 11:00	5.8	121	0	1.6
	2020/09/10 10:00	7.3	124	0	3.8
	2020/09/10 09:00	7.3	133	0	4
	2020/09/10 08:00	7.1	135	0.1	3.5
	2020/09/10 07:00	6.4	134	0.1	1.8
	2020/09/09 21:00	4.4	134	0.1	1
	2020/09/09 20:00	5.5	128	0.1	0.2
	2020/09/09 19:00	6.1	125	0.1	0.2
	2020/09/09 18:00	6.4	138	0.1	0.2
	2020/09/08 20:00	6.8	151	0.1	0.8
	2020/09/08 19:00	11.7	158	0.1	4.4
	2020/09/07 20:00	11	157	0.1	5.4
	2020/09/07 19:00	9.2	158	0.1	4.3
	2020/09/06 19:00	7.4	161	0.1	2.3
	2020/09/04 08:00	11.6	157	0.1	10.6
	2020/09/02 19:00	9.5	150	0.1	8
	2020/09/02 18:00	7.8	132	0.1	5.2
	2020/09/02 17:00	6	158	0.1	2.3
	2020/09/02 16:00	4.9	155	0.1	3
	2020/09/02 15:00	4.6	154	0.1	2.5
	2020/09/02 14:00	3.7	151	0.1	0.4
	2020/09/02 13:00	11.3	95	0.1	9

	2020/09/02 12:00	10.9	107	0.1	7.6
	2020/09/02 11:00	7.4	105	0	1.6
	2020/09/01 23:00	9.7	118	0	3.1
	2020/09/01 22:00	8.4	114	0	2.8
	2020/09/01 21:00	14.6	122	0	9.6
	2020/09/01 20:00	14.5	153	0	10
	2020/09/01 19:00	5.6	121	0	0.7
	2020/09/01 18:00	6	111	0	2.1
	2020/09/01 17:00	6	99	0	1.8
	2020/09/01 16:00	6	105	0	2.2
	2020/09/01 15:00	5.8	121	0	1.6
	2020/09/01 14:00	7.3	124	0	3.8
	2020/09/01 13:00	7.3	133	0	4
	2020/09/01 12:00	7.1	135	0.1	3.5
	2020/09/01 11:00	6.4	134	0.1	1.8
	2020/09/01 10:00	4.4	134	0.1	1
Unit 32	2020/09/17 19:00	2.8	174	0	1.6
	2020/09/09 19:00	3.5	171	0	2
	2020/09/05 19:00	3.6	175	0	1.5
	2020/09/02 16:00	3.8	143	0	0.8
	2020/09/02 15:00	3.8	174	0	0.9
	2020/09/02 14:00	4.1	176	0	1
	2020/09/01 22:00	4	117	0	0.9
	2020/09/01 21:00	3.8	177	0	0.9
	2020/09/01 20:00	4.1	201	0	1
	2020/09/01 19:00	4	180	0	1
	2020/09/01 18:00	4.1	190	0	1
	2020/09/01 13:00	3.2	127	0	0.6
	2020/09/01 12:00	5.3	205	0	0.9
	2020/09/01 11:00	4.7	202	0	1.2
	2020/09/01 10:00	3.2	200	0	0.5
	2020/09/01 09:00	2.7	201	0	0.4
Unit 41	2020/09/17 19:00	4.1	162	0	0.3
	2020/09/10 20:00	5.7	143	0	0.2
	2020/09/10 19:00	6.2	155	0	0.2
	2020/09/09 21:00	5.5	124	0.1	2.6
	2020/09/09 20:00	5.2	149	0	0.4
	2020/09/09 19:00	5.5	136	0.1	1.5
	2020/09/07 20:00	6.1	120	0.1	0.3
	2020/09/07 19:00	6.6	171	0.1	0.2
	2020/09/05 19:00	5.2	168	0	0.3
	2020/09/02 19:00	5.5	131	0	3.6
	2020/09/02 18:00	5.5	105	0.1	2.1
	2020/09/02 17:00	5.2	108	0.1	0.2
	2020/09/02 16:00	5.2	138	0.1	0.5

	2020/09/02 15:00	5.2	161	0	0.4
	2020/09/02 14:00	5.1	163	0	0.2
	2020/09/02 13:00	5	162	0	0.2
	2020/09/01 22:00	5.3	134	0.1	0.3
	2020/09/01 21:00	5	173	0	0.2
	2020/09/01 20:00	5	184	0.1	0.2
	2020/09/01 19:00	5.1	165	0.1	0.2
	2020/09/01 18:00	5.1	176	0	0.2
	2020/09/01 17:00	5	177	0	0.2
	2020/09/01 16:00	5.1	181	0.1	0.6
	2020/09/01 15:00	6	181	0	2.9
	2020/09/01 14:00	5.8	168	0.1	3.2
	2020/09/01 13:00	5.5	138	0.1	1.2
	2020/09/01 12:00	5.3	193	0	1.2
	2020/09/01 11:00	6.6	191	0	5.6
	2020/09/01 10:00	4.9	187	0.1	0.4
	2020/09/01 09:00	3.8	183	0	0.2
Unit 42	2020/09/17 19:00	0.4	174	0.1	0.5
	2020/09/10 20:00	1.3	135	0.1	0.5
	2020/09/10 19:00	1.4	158	0.1	0.8
	2020/09/09 21:00	1.2	124	0.1	0.6
	2020/09/09 20:00	1.3	163	0.1	0.5
	2020/09/09 19:00	0.8	171	0.1	1.4
	2020/09/07 20:00	0.4	125	0.1	0.6
	2020/09/02 19:00	1.4	142	0.1	0.6
	2020/09/02 18:00	1.4	120	0.1	0.7
	2020/09/02 17:00	1.2	121	0.1	0.6
	2020/09/02 16:00	1.3	144	0.1	0.6
	2020/09/02 15:00	0.3	166	0.1	0.5
	2020/09/02 14:00	0.2	174	0.1	0.5
	2020/09/02 13:00	0.5	175	0.1	0.5
	2020/09/01 22:00	0.8	130	0.1	0.8
	2020/09/01 21:00	1	172	0.1	0.7
	2020/09/01 20:00	1.1	190	0.1	0.9
	2020/09/01 19:00	1.1	171	0.1	1
	2020/09/01 18:00	1.2	179	0.1	0.8
	2020/09/01 17:00	1.3	185	0.1	0.9
	2020/09/01 16:00	1.1	183	0.1	0.7
	2020/09/01 15:00	1.4	198	0.1	0.8
	2020/09/01 14:00	1.3	184	0.1	0.8
	2020/09/01 13:00	1.3	155	0.1	0.9
	2020/09/01 12:00	1.6	207	0.1	0.6
	2020/09/01 11:00	1.7	205	0.1	0.7
	2020/09/01 10:00	1.6	202	0.1	0.8
	2020/09/01 09:00	1.3	195	0.1	0.8
Unit 43	2020/09/17 19:00	1.8	145	1.2	1.4
	2020/09/17 18:00	2.2	145	1.1	2

	2020/09/10 20:00	2	128	1.2	0.2
	2020/09/10 19:00	2.4	135	1.2	1.8
	2020/09/10 18:00	2	124	1.2	1.9
	2020/09/10 17:00	2	123	1.3	1.5
	2020/09/10 16:00	1.9	131	1.3	1.2
	2020/09/10 15:00	2	122	1.3	1.9
	2020/09/10 14:00	2.2	112	1.3	2
	2020/09/10 13:00	2.4	141	1.3	1.6
	2020/09/10 12:00	2.3	138	1.2	1.3
	2020/09/10 11:00	0.7	128	1.2	0.1
	2020/09/10 10:00	0.6	122	1.3	0
	2020/09/10 09:00	0.6	108	1.4	0
	2020/09/10 08:00	0.8	141	1.2	0
	2020/09/10 07:00	1.8	147	1.2	1.1
	2020/09/09 21:00	2	144	1.3	0.2
	2020/09/09 20:00	1.9	145	1.4	0.1
	2020/09/09 19:00	1.8	124	1.5	1.9
	2020/09/09 18:00	2	108	1.4	2.4
	2020/09/08 20:00	1.1	113	1.4	0
	2020/09/08 19:00	2.3	127	1.3	2.2
	2020/09/07 20:00	1.6	132	1.4	0
	2020/09/07 19:00	2.3	128	1.2	1.9
	2020/09/06 19:00	3.2	155	1.1	2
	2020/09/02 19:00	1.6	115	1.2	1.5
	2020/09/02 18:00	1.5	92	1.2	1.4
	2020/09/02 17:00	1.5	106	1.1	1.2
	2020/09/02 16:00	1.6	124	1.1	0.9
	2020/09/02 15:00	1.3	140	1.1	0.1
	2020/09/02 14:00	1.1	141	1.2	0
	2020/09/02 13:00	1.3	141	1.2	0
	2020/09/02 12:00	1.4	144	1.2	0
	2020/09/02 11:00	1.7	148	1.2	0.2
	2020/09/01 23:00	1.9	135	1	1.5
	2020/09/01 22:00	1.9	134	1	1.4
	2020/09/01 21:00	1.8	148	1	1.4
	2020/09/01 20:00	1.8	157	0.9	1.1
	2020/09/01 19:00	2.1	157	0.8	0.4
	2020/09/01 18:00	2.1	167	1	0.4
	2020/09/01 17:00	2	171	1	0.4
	2020/09/01 16:00	2	174	1	0.3
	2020/09/01 15:00	1.5	171	1	0.3
	2020/09/01 14:00	1.5	154	1.1	0.2
	2020/09/01 13:00	1.5	132	1	0.1
	2020/09/01 12:00	1.6	172	1	0
	2020/09/01 11:00	1.3	166	1.1	0.3
	2020/09/01 10:00	1.4	170	1.1	0.5
	2020/09/01 09:00	2.2	171	1.2	1.4

Total Emission mass (Tons)		5.356	53.46	0.067	5.615
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COMMENT: All pollutants measured were within allowed limits and no non-conformances were registered for the month under review.

Table 4: Each unit and respective days operating under normal operation (Please note the units rarely run for the entire day)

Unit	Hours operating under normal operation	Test-run hours	Total
11	29	18	47
12	46	19	65
21	18	14	32
22	44	20	64
31	50	20	70
32	16	13	29
41	30	18	48
42	28	17	45
43	49	20	69
<i>Total</i>	<i>310</i>	<i>159</i>	<i>469</i>

3 Monitoring Equipment: Continuous Emission Monitoring System (CEMS) availability

Table 5

Associated Unit	Technology Type	Actual Utilisation (%) for the month of September
<i>Unit 11</i>	CEMS	100%
<i>Unit 12</i>	CEMS	100%
<i>Unit 21</i>	CEMS	100%
<i>Unit 22</i>	CEMS	100%
<i>Unit 31</i>	CEMS	100%
<i>Unit 32</i>	CEMS	100%
<i>Unit 41</i>	CEMS	100%
<i>Unit 42</i>	CEMS	100%
<i>Unit 43</i>	CEMS	100%

4 Monitoring Equipment Calibration

Continuous Emission Monitoring System (CEMS) is always online unless a fault is reported. The system auto calibrates every four (4) hours and raises an alarm if auto calibration is out of spec. Onsite technicians calibrate the system with calibration gas annually.

5 Ambient Monitoring Station

The station has had the PM analyser installed and unfortunately due to weather related damages it had to be uninstalled. It was sent away to the supplier for quotation for repairs and the quote has been received. A PR is in the system to have the analyser repaired.

6 Load Factor: 5.46%

7 Leak Detection and Repair programme

No leaks were reported during September 2020

8 Complaints Register

Table 6. Complaints for the month of September 2020

Source Code/ Name	Root Cause Analysis	Calculation of Impacts/ emissions associated with the incident	Dispersion modelling of pollutants where applicable	Measures implemented to prevent reoccurrence	Date by which measure will be implemented
None	N/A	N/A	N/A	N/A	N/A

9 General

The rest of the information demonstrating compliance with the emission license conditions is supplied in the annual emission reports sent to your office.

Trusting the above meets the reporting requirements specified within the stations' Atmospheric Emission License.

Do not hesitate to contact Maureen Dlulisa on 021 573 6162 for any related queries.

Yours sincerely



Pamela Mrubata

ANKERLIG POWER STATION